APPENDIX L
COMMUNITY SERVICES AND FACILITIES

This appendix describes in greater detail the community services and facilities referenced in the text and tables presented in Sections 3.12 and 4.12.

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Table L.3-1 Selected Visitation and Participation Summary

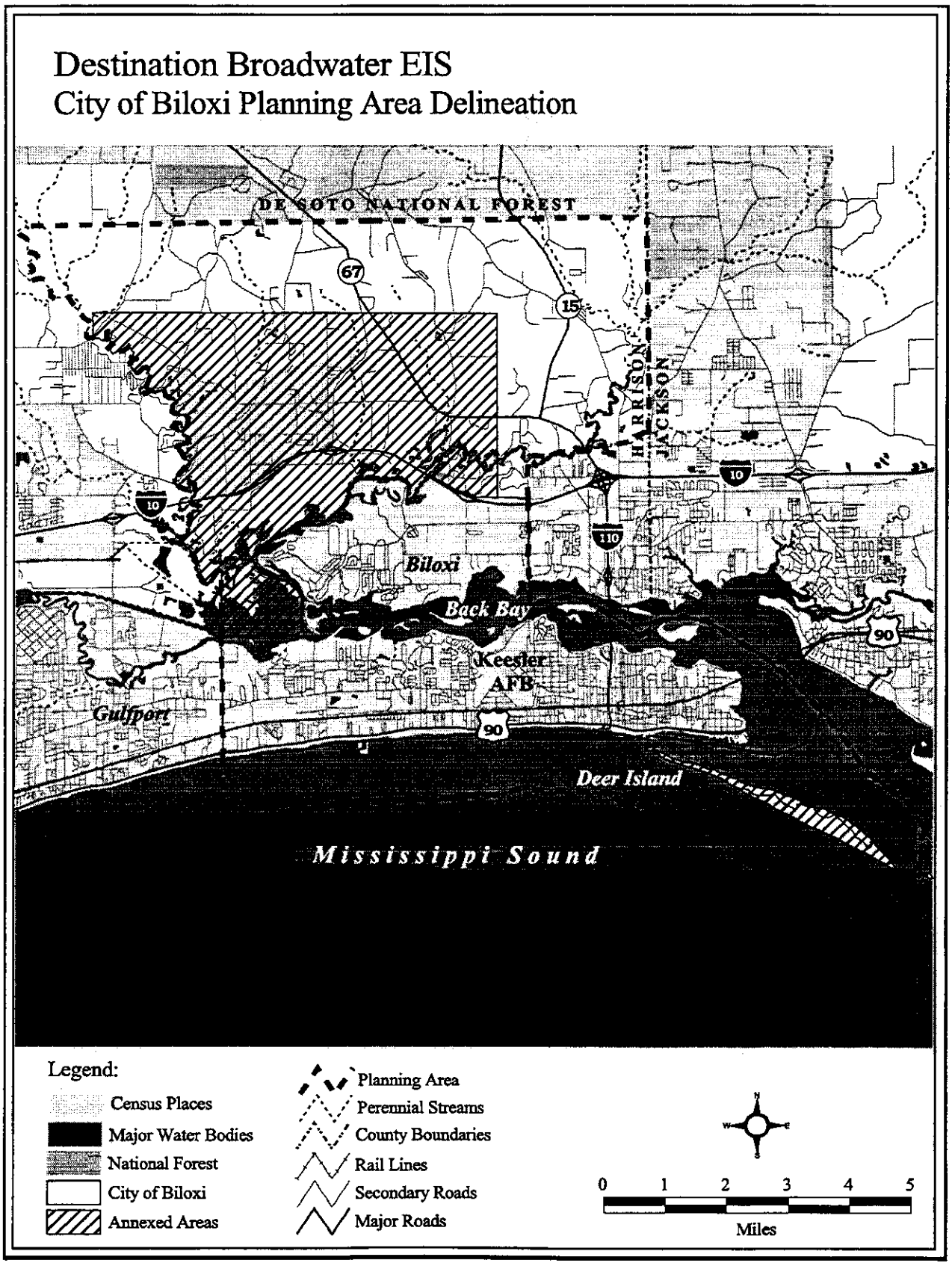

Figure L-1: City of Biloxi planning area delineation

L.1 SUMMARY AND ANALYSIS OF PUBLIC EDUCATION INDICATORS AND REVENUES

L.1.1 Student Population

The enrollment data provided for school years 1995-1996 and 1997-1998 was taken from the Mississippi Department of Education's Public School Enrollment 1995-1996 and 1997-1998 End of First Month publication. The figures reflect the enrollment at the end of the first month of the school years beginning in the fall of 1995 and the fall of 1997 (Mississippi Department of Education, 1999a).

L.1.2 Classroom Pupil/Teacher Ratio

The Classroom Pupil/Teacher Ratio was calculated by dividing the school district's Average Daily Attendance by the number of classroom teachers in the district (Mississippi Department of Education, 1999a).

L.1.3 Total Per Pupil Expenditure

The Total Per Pupil Expenditure was calculated by using the total current expenditures from all sources of revenue divided by the nine months' Average Daily Attendance. Current expenditures reflect all costs of school district operation except improvement to 16th section land, facilities acquisition and construction, and debt service (Mississippi Department of Education, 1999a).

L.1.4 State and Local Revenues

The percentage of state and local revenues indicates the source of revenues for a school district. The percentage was calculated by dividing the total for state and local revenues by the total revenues for each district (Mississippi Department of Education, 1999a).

L.1.5 Federal Revenues

The percentage of federal revenues indicates the source of revenues for a school district. The percentage was calculated by dividing the total federal revenues by the total revenues for each district (Mississippi Department of Education, 1999a).

L.1.6 Graduation Rate

The graduation rate was calculated by dividing the number of graduates by the number of ninth grade students four years earlier. The ninth grade enrollment number was been adjusted to reflect the number of new students entering the system, the number moving out, the number failing, and the number of deaths. Students moving in or out of a district in the summer were not included in the calculations (Mississippi Department of Education, 1999a).

Table L.1-1
1998 School Funding Levels by Source

School District	Local Sources	State Sources	Federal Sources	Total Revenue
Harrison County	$18,103,549	$29,333,814	$6,370,565	$53,807,929
Biloxi	$12,883,738	$15,697,747	$6,662,395	$35,243,880
Gulfport	$16,561,768	$15,967,444	$4,392,209	$36,921,422
Long Beach	$5,242,604	$9,802,306	$1,251,234	$16,296,145
Pass Christian	$5,546,314	$4,371,070	$1,009,184	$10,926,569
Hancock County	$8,519,250	$8,685,463	$1,951,147	$19,155,861
Bay/Waveland	$5,415,479	$5,954,272	$1,721,175	$13,090,927
Jackson County	$13,190,453	$19,391,260	$2,754,623	$35,336,338
Moss Point	$7,368,441	$12,524,736	$2,962,244	$22,855,421
Ocean Springs	$9,063,360	$12,434,302	$1,515,618	$23,013,281
Pascagoula	$18,032,740	$19,593,653	$4,114,521	$41,740,916

Source: Mississippi Department of Education, 1999b.

L.1.7 Relationship Between Per Pupil Expenditure and Performance

Within the past decade, there has been a great deal of controversy about whether increased school funding results in higher student achievement. Not surprisingly, educators in districts with significant property wealth traditionally argue that money is relatively unimportant to the success of their students. At the same time, those from poorer districts are quick to point out the many material disadvantages in their schools, and ask the question, why, if money does not make a difference, the wealthy districts are so reluctant to share their resources (Cardenas, 1992). In its Edgewood decision, the Texas Supreme Court argued that the money available for any student has a "real and meaningful impact on educational opportunity" (Walker, 1989).

A recent study by Larry Hedges and associates (1994) reanalyzed a previous study on the impact of per-pupil expenditures and student performance. It was discovered that a $500 (roughly 10 percent) increase in average spending per pupil would significantly increase student achievement. Likewise, a study completed by Faith Crampton (1995) of inputs affecting achievement in New York State schools found that expenditures seemed to matter when they bought smaller classes and more experienced, highly educated teachers. A similar study by Harold Weglinsky (1997) found that fourth and eighth graders' math achievement was positively associated with lower student-teacher ratios and with expenditures on instruction and school district administration.

A study by Kasten Tallmadge in 1973 analyzed the relationship between reading and mathematics achievement gains and per-pupil expenditures in California. The objective of the study was to shed additional light on the cost-benefit and critical mass issues central to the compensatory education planning and policy making process. The study covered reading and math programs in grades one through twelve. The study sample included all schools in California that reported both achievement gains and expenditures. Saturated schools — those with 75 percent or more of the pupils eligible for Title I participation — were found to differ

significantly from unsaturated schools showing greater gains in both reading and math and greater Title I per–pupil expenditures.

Title I is a compensatory education program that provides supplementary instruction to students who are achieving below average in comparison to their peers. The intent of the program is to assist students to meet state achievement standards expected for all students (Mississippi Department of Education, 1999a). Within Harrison County, ten of its 14 public schools are Title I Schools with 6,725 eligible students, 100 percent of which are served by Title I benefits. Within the city of Biloxi, eight of its 11 schools are Title I Schools with 4,105 eligible students, 97 percent of which are served by Title I benefits.

L.1.8 Relationship Between Student-Per-Teacher Ratio and Performance

A study conducted by Nikola Filby (1980) described change (and lack of change) in instructional processes and teacher and student behavior when class size was reduced by one-third midway through the school year. Two second-grade classes from two schools participated; one school was in rural Virginia, the other an inner-city school in California. Information was collected through observation, teacher journals, and interviews. General patterns of change occurred when class size was reduced. Teachers reported that classroom management seemed easier and more effective. There was also evidence that classes functioned more smoothly, student attention rates were generally higher, and there were fewer absences. The teachers welcomed the opportunity for greater individualization of instruction. Changes in curriculum also occurred, most in the form of enrichment activities such as more instructional games, reading for pleasure, and field trips. Within the basic reading and mathematics curriculum, some teachers found that students completed lessons and progressed through the curriculum more quickly. Other teachers developed lessons in greater depth. While the teachers expressed a sense of greater freedom and increased enthusiasm from the constraints of a large class, it appeared that easing these constraints allowed the teachers to do what they were already inclined to do in a better fashion.

In 1992, Barbara Nye prepared a study compiling five years of small class research on the benefits students derived from reduced student/teacher ratios. Nye researched the Lasting Benefits Study (LBS), which tracks students who participated in Tennessee's K-3 Student/Teacher Achievement Ratio (STAR) Project (1985-1989) as they continue into later grades. Project STAR was a statewide experiment conducted to demonstrate the effects of reduced student/teacher ratios (15:1) on student achievement (reading and mathematics) and development (e.g., self-concept, discipline, and attendance). Students in smaller classes outperformed students in larger classes in all grades (K-3). This paper presents student achievement results from fourth grade, the first year that students went from small (15:1) to regular (25:1) classes. Multivariate analysis of variance for LBS revealed that the positive effects from involvement in a small-size class remained significant one full year after students returned to regular-size classes. Students who previously were in small-size STAR classes demonstrated that they continued to have statistically significant advantages over students who had been in the other two class types (regular and regular-with-aide) on every set of measurements and across all school locations (inner-city, rural, suburban and urban).

In a similar report by Barbara Nye, Project Challenge was evaluated. Project Challenge was a Tennessee Department of Education program to reduce at-risk student/teacher ratio in kindergarten through third grade classes in 17 rural Tennessee school systems. A summary of findings relating the Student Teacher Achievement Ratio Project (STAR) and the Lasting Benefits Study is followed by discussion of the design and limitation of the Project Challenge. The Tennessee Comprehensive Assessment Program (TCAP) achievement test was used to evaluated student achievement, and Project Challenge students were compared with students from Tennessee's 138-school system. Results showed that from 1990 to 1991, 9 of the 17 system in Project Challenge improved their statewide rankings in reading, and 10 Project Challenge systems improved their statewide rankings in mathematics.

L.1.9 Historical and Projected Gaming Tax Revenues for Public Schools

The historical Public School allotment of the Gaming Tax Revenue generated for the city of Biloxi, the city of Gulfport, and Harrison County was derived by applying the required 20 percent public school allocation from the total revenue collected. Total revenue generation was derived from the Gulf Regional Planning Council and FY 1998 and FY 1999 data sources.

L.1.10 Historical and Projected Per-Student Gaming Revenue

The historical and projected per student gaming revenue for the city of Biloxi was determined by dividing the total school-age population for a given year by the total public school revenue generated from the Gaming Tax.

L.1.11 Historical and Projected School Age Population

School-age population includes that segment of the population between the ages of 5 and 19. Historical Harrison County school-age data were provided for 1970, 1980, and 1990 from the U.S. Bureau of Census, 1970, 1980, June 30, 1999 Release. Projected Harrison County school-age data were provided for 2005, 2010, and 2015 from the Center for Policy Research and Planning, Mississippi Institutions for Higher Learning, 1998. Total Harrison County population data were provided from the U.S. Bureau of Census, June 30, 1999 Release for 1990-1998, and from 2000-2010 from Mississippi State Institute of Higher Learning, 1996, 1998, and U.S. Bureau of Census, June 30, 1999 Release.

In order to determine the projected growth of the school-age population between the given years of 1970, 1980, 2005, 2010, and 2015, a percentage of the total population between the ages of 5 and 19 was compiled for the given years. For the year 1990, the school-age segment of the population was 23.36 percent. For the year 2005, the school-age segment of the population was 21.4 percent and for the year 2010, the school-age segment was 20.29 percent. Year 2015 data were not considered in the analysis for consistency with the 2010 project buildout.

Between 1990 and 2005, the school-age segment of the population decreased a total of 1.96 percent. In order to establish a school-age population between 1990 and 2005, an annual average percentage decrease would be required. An annual average percentage decrease was determined

by dividing the 1.96 percent decrease by the total number of years between 1990 and 2005. Similarly, to establish a trend between 2005 and 2010, the total decrease in school-age population was 1.11 percent. An annual average percentage decrease was determined by dividing the 1.11 percent decrease by the total number of years between 2005 and 2010. The resulting school-age population component of the total Harrison County population resulted in an average of 22 percent between 1990 and 2010.

Historical population data for the city of Biloxi between 1990 and 1998 were derived from the U.S. Bureau of Census, June 30, 1999 Release. Projected population data for the city of Biloxi was not available. In order to determine the school-age population within the city of Biloxi, it was first necessary to determine the total projected population for the city. Between 1990 and 1998, the Biloxi component of the total Harrison County population averaged 27.67 percent. The average 27.67 percent was determined by summing the total average increase per year between 1990 and 1998. The city of Biloxi projected population was derived from applying the 27.67 percent to the total Harrison County population.

In order to determine the school-age population for the city of Biloxi, the same averages applied to the Harrison County school-age population were used. Consequently, the average 22 percent of the total Harrison County population that constitutes the school-age population was applied to the city of Biloxi.

L.2 SUMMARY AND ANALYSIS OF PUBLIC SAFETY REVENUES AND PERSONNEL

L.2.1 Historical and Projected Gaming Tax Revenues for Public Safety

The historical Public Safety portion of the Gaming Tax Revenue generated for the city of Biloxi, the city of Gulfport, and Harrison County was derived applying the 20 percent public school allocation from total revenue generation. Total revenue generation was derived from the Gulf Regional Planning Council and FY 1998 and FY 1999 data sources.

L.2.2 Historical and Projected Public-Safety-Personnel-Per-Population Ratio

Public-safety-personnel-per-population ratio was derived from applying the 1998 ratio of public safety personnel to the total population. Public safety personnel included full-time personnel and part-time personnel. In order to derive a manageable ratio, the personnel per population was multiplied by 10,000. The personnel per population ratios resulted in 1:14.05 for Harrison County, and 1:32.97 for the city of Biloxi.

Projected public-safety-personnel-per-population ratios were used as a measurement of service levels considered adequate in 1998. Projected personnel per population ratios were then applied to the future population resulting from the Proposed Action and its alternatives in order to determine future public safety needs.

L.3 REGIONAL RECREATION RESOURCES

In the region of influence for the Proposed Action and its alternatives, the major regional providers of recreation opportunity are the U.S. Forest Service and the National Park Service. Other providers that have a less pronounced regional influence are the U.S. Fish and Wildlife Service (through the National Wildlife Refuge System), the state of Mississippi (through the Mississippi State Parks system and the Pearl River Basin Development District), and private recreation providers.

Table L.3-1 shows the current recreation visitation, capacity, and acreages for major facilities and/or programs in the three-county region.

Table L.3-1
Selected Visitation and Participation Summary

Recreation Area	Estimated Annual Visitation or Participation	Acreage
Gulf Islands National Seashore (GINS)	5.5 million total (3 million estimated, MS portion)	135,624 ac total (74,999 ac, MS portion)
GINS — Ship Island	100,000 (approx. 60,000 by tour boat and 40,000 by private boat)	———
DeSoto National Forest	30,000 – 40,000	63,000 acres
Shepard State Park	15,000 – 20,000	400 acres
Buccaneer State Park	450,000 – 500,000	approx. 400 acres
McCleod Water Park	100,000	approx. 400 acres
MS Sandhill Crane National Wildlife Refuge	3,600	19,000 acres
City of Biloxi Athletic Programs	2,500 youths, 300 adults	not applicable
Harrison County Sand Beach Development	unknown	5 developed areas; 7 miles of boardwalk (non-contiguous)

L.3.1 National Park Service

The National Park Service (NPS) manages the Gulf Islands National Seashore (GINS), which is comprised of eleven administrative units in northwest Florida and coastal Mississippi. Of 135,624 total acres within GINS boundaries, a little over half (55 percent, or 74,999 acres) are located in Mississippi, and all of the Mississippi-based GINS facilities and areas are either located adjacent to Ocean Springs or in the waters of the Mississippi Sound and Back Bay.

At Davis Bayou (near Ocean Springs, Mississippi), a 400-acre facility offers visitors opportunities for camping, boating, interpretive trails and exhibits, picnicking, softball, and basketball. In addition to the Davis Bayou facilities, the Mississippi portion of the GINS includes four barrier islands, which provide recreation and interpretive opportunities as well as

protection of natural resources. These barrier islands offer numerous benefits, including boating and fishing opportunities in protected waters, a natural defense for the shoreline and infrastructure on the mainland, and protection for 250 bird species and 200 plant species. In addition, protection and enjoyment of historical and cultural resources are available on Ship Island, a barrier island approximately 12 miles off the Mississippi Coast in the Mississippi Sound. The historic significance of Ship Island spans several eras, including the French immigration (circa 1700), the War of 1812, and the Civil War. A private concession provides daily ferry service to Ship Island from the Gulfport Yacht harbor. Approximately 3 million visitors per year visit the Mississippi units of the Gulf Islands National seashore, including Ship Island.

L.3.2 U.S. Forest Service

The U.S. Forest Service manages the DeSoto National Forest, an area that is roughly 63,000 acres, or 21 percent of Harrison County's land base. National Forest (NF) lands are managed for multiple uses, including dispersed and developed recreation. Some of the recreation opportunities available on the DeSoto National Forest include camping, hunting, picnicking, hiking, walking, boating, fishing, equestrian activities, mountain biking, and all-terrain-vehicle use. Facilities are a mix of fee- and non-fee areas, depending on the level of services offered.

The DeSoto National Forest includes three specially designated management areas, including the only two federally designated National Wilderness Preservation System areas and the only National Wild and Scenic River in Mississippi. Approximately 6,000 acres of designated wilderness includes one 940-acre tract (Leaf Wilderness Area) and a 5,050-acre tract (Black Creek Wilderness Area). These areas are approximately 50 miles from Biloxi. In addition, 21 miles of Black Creek (out of a total 40-mile length through the DeSoto National Forest) has been designated as a National Scenic River.

No formal mechanisms are in place for tabulating the number of visitors to the DeSoto National Forest, but staff estimates the annual recreational usage of the forest to be approximately 16-18,000 users. This estimate includes both dispersed uses (such as hunting, fishing, and primitive camping) as well as visits to the forest's developed campground facilities (personal communication, T. Sloan, Recreation Officer, DeSoto National Forest, Wiggins, MS and D. Burns, EDAW, Atlanta, GA, August 26, 1999). The distribution of resident versus non-resident use is not known.

L.3.3 U. S. Fish and Wildlife Service

The U. S. Fish and Wildlife Service (USFWS) manages the National Wildlife Refuge (NWR) system, which includes over 92 million acres in 500 refuge units across the United States. Each individual NWR is managed according to objectives specifically adopted for that NWR. Most, but not all, NWRs have a large public recreation component as part of their management, objectives, and mission.

There are two NWR units within the three-county region. The NWR nearest the Broadwater site—Mississippi Sandhill Crane NWR—is also the largest of these, comprising about 19,000 acres in four administrative units. The principal management objective of Mississippi Sandhill Crane NWR is to provide and protect habitat for the sandhill cranes, and public use of the area is not compatible with this objective. Hunting, fishing, and camping are not allowed, and current estimated visitation (mostly interpretive and environmental education visits) to the Mississippi Sandhill Crane NWR is approximately 2,500 visits annually.

Grand Bay NWR is located approximately 10 miles east of Pascagoula. Visitation is estimated to be 2,500 per year. As of 1999 Grand Bay had 14,000 acres, but this NWR is anticipated to encompass over 16,000 acres when acquisition is complete. The area will be open to the public for fishing, hunting, and other related outdoor recreation opportunities.

L.3.4 Mississippi Department of Wildlife, Fisheries, and Parks

There are two state parks in the three-county region, and the Broadwater site is located roughly halfway between them. Buccaneer State Park is in Waveland in Hancock County, about 20 miles west of Biloxi. Shepard State Park is near Pascagoula in Jackson County, roughly 20 miles to the east of Biloxi and the Broadwater site. These parks are approximately the same size (400 acres), but the level of development and resulting visitation estimates are quite dissimilar. Buccaneer State Park annual visitation is approximately 30 times the visitation estimated at Shepard State Park.

Buccaneer State Park offers 200 camping units, including opportunities for tent camping and RV camping (including sewer hookups). There is also an overflow camping area suitable for large groups. In addition, the park offers a seasonal wave pool, game room, tennis courts, basketball courts, playgrounds, a nature trail, outdoor amphitheater, camp store, and opportunities for fishing.

Shepard State Park has only been open to the public since February 1999. Recreation facilities at Shepard State Park include 32 RV campsites (with electricity and water), primitive camping facilities, a picnic pavilion, a nature and biking trail, and a disk golf course.

L.3.5 Other Public Providers

McCleod Water Park is located in Bay St. Louis, approximately 20 miles west of Biloxi. This public recreation area is managed by the Pearl River Basin Development District under a joint a county/state agreement. The Pearl River Basin Development District is a state agency charged with the management of several properties and programs associated with waters of the Pearl River Basin and the Jourdan River. The Pearl River Basin Development District manages approximately 12 parks whose main purpose is to provide recreational access to the Pearl River, its tributaries, and the Jourdan River. McCleod Water Park is approximately 400 acres and provides public access to the Jourdan River.

Recreation amenities at McCleod Water Park includes RV camping, primitive camping, boat launching, canoeing/tubing, fishing, nature trail, picnicking, and swimming (river-based). Annual visitation at McCleod Water Park has been stable at approximately 100,000 visitors per year.

L.3.6 Private Recreation Providers

There are several private recreation facilities and providers in the three-county region, including riding stables, canoe liveries, tour operators, amusement parks, and private campgrounds. In addition to the public campgrounds and sites identified above, approximately 1,550 developed campsites, 40 additional primitive campsites, and 30 cabins are offered by private providers.

Taking all providers into account, approximately 2,000 developed campsites and over 700 primitive campsites are provided in the three-county region. Two-thirds of these developed campsites are provided by private campgrounds, while the public sector provides the vast majority (95 percent) of the undeveloped or primitive campgrounds available.

Existing public recreational facilities at President's/Broadwater include a golf course, swimming pool, and marina facilities (including a fishing pier). The swimming pool is only open to hotel guests, but other facilities are considered semi-public facilities.

L.3.7 Locally Provided Recreation Opportunities

The most relevant regions of influence for local recreation providers are the Biloxi-Gulfport area, the Biloxi Planning Area, and Harrison County. City and county recreation providers generally provide recreation opportunities that are targeted to meet the close-to-home recreation needs of residents, providing facilities such as community and neighborhood parks, urban trails, ballfields, recreation centers, tennis courts, swimming pools, and picnic areas. City and county government responses to changes in population will directly influence the provision of recreation opportunity, especially to residents but also to visitors.

In Biloxi, as well as Harrison, Hancock, and Baldwin Counties, shoreline and beach access are recreational opportunities that are important to local residents as well as to non-resident tourist visitors. Most other locally provided recreation opportunities, however, are mostly used by local residents. Non-resident visitors will take advantage of picnic areas, local parks, and other recreational amenities if they are conveniently located, but generally this use is a matter of convenience, and rarely do non-resident visitors participate in local recreation programs such as athletic leagues or classes.

Both Harrison County and the city of Biloxi provide the kinds of recreational facilities that are typically provided by local governments of this size. They focus on providing affordable, close-to-home opportunities such as neighborhood parks, playfields (such as baseball, softball, soccer, and football), playgrounds, and athletic programs, mostly targeted to residents.

As the population of Biloxi increases, the number of recreation facilities should be expected to increase commensurately in order to retain the existing level of service. Residents can then expect that the availability, convenience, and quality of a recreation experience will remain constant even as population changes.

The Harrison County Sand Beach Department is responsible for maintenance of approximately 26 miles of beach in Harrison County. Their responsibility covers the area from the sidewalk down to the deep water mark. They manage vendors on the beach, five developed facilities (referred to as "bus-stop facilities"), and approximately seven miles (non-contiguous) of wooden boardwalk along the beach. A nine-mile addition to the boardwalk is planned. The bus-stop facilities consist of a deck, showers, and restrooms. The annual budget for the Harrison County Sand Beach Department is approximately $1.5 million, with about $75,000 of that allocated annually to maintenance.